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2 WORLDNET Profile

What Is WORLDNET?

Authorized and funded by the United States (U.S.) Congress, WORLDNET was created within the U.S. Information Agency's (USIA) Television and Film Service in 1983. Its mission is to advance the delivery of the U.S. Government's public diplomacy message to people around the world via satellite television. It provides both live and pre-recorded programs in English, French, Spanish, Portuguese, and Arabic, without cost to requesting broadcast, educational, and government institutions.

WORLDNET is an extension of the Voice of America (VOA) radio broadcasts with two important differences. 1) It provides television viewing rather than radio. 2) During interactive programming, the audience views a live program and may ask questions of the program participants by using telephone connections to the broadcast studios in Washington, D.C.

The establishment of WORLDNET's worldwide television broadcasting capability began with service to Europe in 1985, Latin America in 1986, Africa in 1987, and East Asia in 1988. WORLDNET is a pioneer producer of interactive television, providing one-way video and two-way audio broadcast capabilities. Over 1,500 interactive satellite, press conferences between Washington, D.C. and all areas of the world have been conducted since its first transmission in 1983.

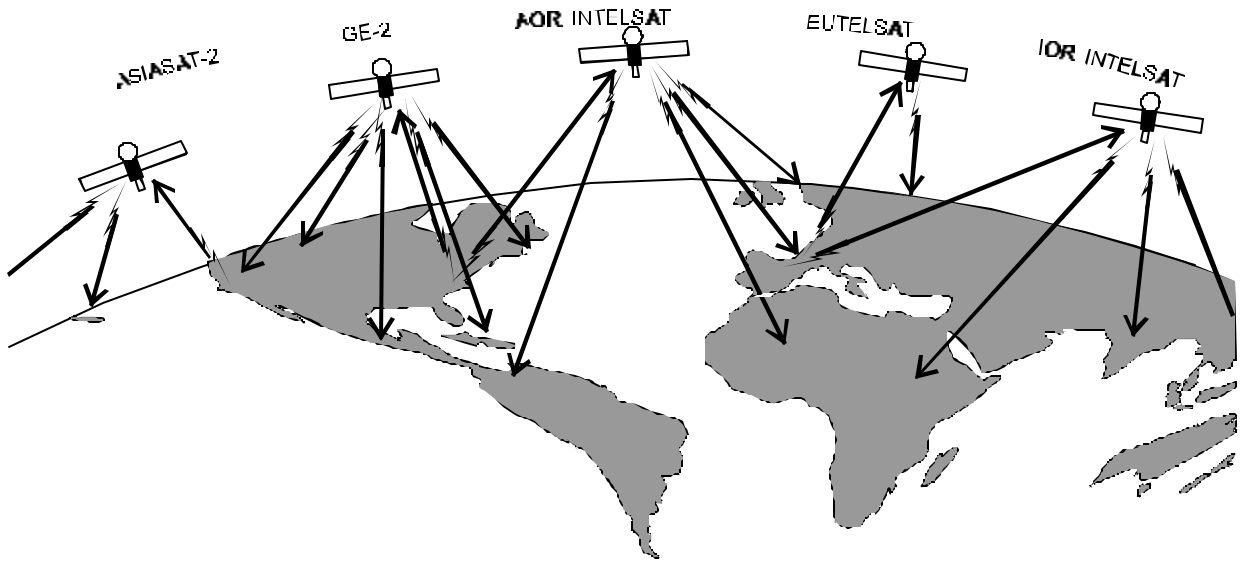
WORLDNET television broadcasts are for reception by Television Receive Only (TVRO) systems at U.S. government installations. TVRO systems are located at 208 sites in 112 countries throughout the world. About 80% of the site installations are located at U.S. embassy and consulate posts. The other systems are located at off-post locations, such as U.S. ambassador residences, cultural centers, TV and/or radio stations, and foreign government buildings.

How WORLDNET Satellite Transmitting Works

Broadcast programs are sent via fiber optic cable from WORLDNET's production studios in Washington, D.C., to Tysons Corner, Virginia, and then via microwave signal to either Fairfax or Independent Hill, Virginia.

At Fairfax, Virginia, the signal is transmitted to the Atlantic Ocean Region (AOR) INTELSAT satellite. The AOR signal is received by the Western Hemisphere Affairs (WHA), African, and European TVRO systems, and it is transmitted down to ground stations in Bercenay, France, and Munich, Federal Republic of Germany (FRG). At Bercenay, the signal is transmitted to the EUTELSAT satellite for reception by European TVROs. At Munich, the signal is transmitted to the African and Near East Asian TVROs. The AOR signal is received at Kuwait and is transmitted to the ASIASAT 2 satellite. The microwave signal received at Fairfax, Virginia is transmitted to the GE II satellite. The signal from this satellite is received by TVROs in the Caribbean, Mexico, and Canada (specifically Alberta and Calgary). Figure 2.1 illustrates how WORLDNET satellite transmitting works.

Figure 2.1, WORLDNET Satellite Transmitting



Understanding Digital and Analog Systems

Initial TVRO system configurations used analog signals. An analog signal is a signal transmitted on a continuously varying electromagnetic wave. For example, sound and light waves are analog signals.

Newer, digital technology is being introduced into TVRO installations. A digital signal is a rapid sampling of an analog wave. These samples are turned into binary numbers and transmitted from the uplink station to receiving stations. The analog signal is then recreated at the receiving site from the binary digital samples and distributed to video and audio equipment.

Analog signals acquire noise as they pass through air and cabling. The noisy signals cannot be corrected. Digital signals also acquire noise, but digital signals use a correction technique called bit error checking (BEC) that can restore some of the signal quality.

Other advantages of digital signals include:

- Better security because they can be encrypted with more complex algorithms, and, therefore, are harder to pirate;
- Greater processing opportunities; and
- Lower cost because digital data compression techniques allow several digital services to be transmitted in the bandwidth required for one analog service.

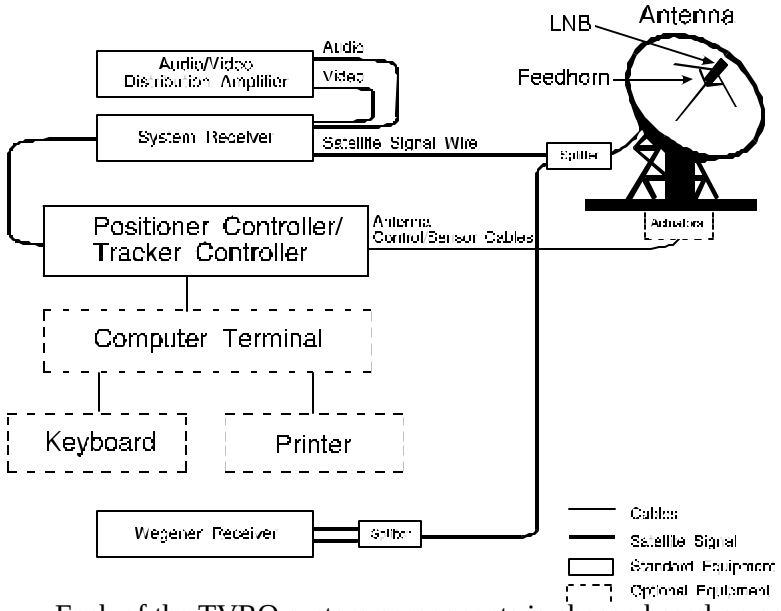
TVRO System Overview

Each TVRO system consists of the following components:

- Antenna;
- Feedhorn, including a low noise block downconverter (LNB);
- System receiver(s);
  - Analog receivers(s); or
  - Digital Integrated Receiver Decoder.
- Satellite positioner/tracker;
- Audio/video distribution amplifier; and
- Wegener receiver(s), some locations.

Figure 2.2 illustrates the location of each of these components within the system.

Figure 2.2, TVRO System Components



Each of the TVRO system components is chosen based on accurate readings of satellite signal levels at the installation site and the operational characteristics of domestic and international satellites visible from the site. Installation and adjustment of each of the system components is critical to ensure maximum signal strength throughout the system.

Within USIA, the Bureau of Broadcasting's Engineering Telecommunications Directorate (B/EBM) is responsible for maintaining each TVRO system in an operational state. Configuration control of each TVRO site must reside with B/EBM to ensure system operational readiness. Each site is requested to notify B/EBM or their site's designated maintenance contractor of their new system requirements before modifying their system's configuration.